

WHAT IS CLAIMED IS:

1. A method of monitoring fabrication performance, the method comprising:
calculating a planned quantity as an expected value that is to be fabricated on a first date
in accordance with a production plan;
calculating an actual quantity as an actual value that is fabricated on a second date; and
calculating a daily part index, wherein the daily part index represents a delta between the
planned quantity and the actual quantity divided by the planned quantity.

2. The method of claim 1, wherein planned quantity values are determined for a date
previous to a date corresponding to the actual quantity.

3. The method of claim 1, wherein the daily part index is determined in accordance with the
equation:

$$PI_{D(p,t)} = \left[1 - \frac{\max \left[\left(\sum_{k=-1}^1 PQ_{(p,t+k-7)} - \sum_{k=-1}^1 AQ_{(p,t+k)} \right), 0 \right]}{\sum_{k=-1}^1 PQ_{(p,t+k-7)}} \right] \times 100\%,$$

wherein

$PI_{D(p,t)}$ is the daily part index of date t for product p ;

t is the date for which the daily part index is being calculated;

p is the product for which the daily part index is being calculated;

$PQ_{(p,t+k-7)}$ is the wafer out quantity sum of product p which is planned to be finished on one week previous of date t according to the production plan; and

$AQ_{(p,t+k)}$ is the wafer out quantity sum of product p which is actually finished in date t .

4. The method of claim 1, further including the step of determining a weekly part index based at least in part on the daily part index.

5. The method of claim 4, wherein only daily part index values greater than a first value are used to calculate the weekly part index.

6. The method of claim 4, wherein the weekly part index is calculated in accordance with the equation:

$$PI_{wp} = \sum_{t=1}^m \frac{PI_{D(p,t)}}{m},$$

wherein

PI_{wp} is the weekly part index for product p ;

p is the product for which the weekly part index is being calculated;

t is the date for which the weekly part index is being calculated;

$PI_{D(p,t)}$ is the daily part index of date t for product p ; and

m is the number of days in one week for which $PI_{D(p,t)}$ is valid.

1 7. The method of claim 4, further including the step of determining a site index based at
2 least in part on the weekly part index.

1 8. The method of claim 7, wherein the site index is calculated in accordance with the
2 equation:

3
$$SI_{wf} \% = \frac{\sum_{t=1}^m PQ_{(p,t)} \times PI_{wp} \%}{\sum_{t=1}^m PQ_{(p,t)}},$$

4 wherein

5 $SI_{wf} \%$ is the site index for week W and fabrication site f ;

6 $PQ_{(p,t)}$ is the wafer out quantity sum of product p that is planned to
7 be finished on dates t on which $PQ_{(p,t)}$ is valid; and

8 PI_{wp} is the weekly part index for product p .

1 9. The method of claim 1, wherein the first date is the same date as the second date.

10. A method of monitoring fabrication performance, the method comprising:
calculating a planned quantity as an expected value that is to be fabricated on a first date
in accordance with a production plan;
calculating an actual quantity as an actual value that is fabricated on a second date; and
calculating a daily part index, wherein the daily part index represents a delta between the
planned quantity and the actual quantity divided by the actual quantity.

11. The method of claim 10, wherein planned quantity values are determined for a date
previous to a date corresponding to the actual quantity.

12. The method of claim 10, wherein the daily part index is determined in accordance with
the equation:

$$PI_{D(p,t)} = \left[1 - \frac{\max \left[\left(\sum_{k=-1}^1 PQ_{(p,t+k-7)} - \sum_{k=-1}^1 AQ_{(p,t+k)} \right), 0 \right]}{\sum_{k=-1}^1 AQ_{(p,t+k)}} \right] \times 100\%,$$

wherein

$PI_{D(p,t)}$ is the daily part index of date t for product p ;

t is the date for which the daily part index is being calculated;

p is the product for which the daily part index is being calculated;

$PQ_{(p,t+k-7)}$ is the wafer out quantity sum of product p which is

planned to be finished on one week previous of date t according

to the production plan; and

11 $AQ_{(p,t+k)}$ is the wafer out quantity sum of product p which is actually
12 finished in date t .

1 13. The method of claim 10, further including the step of determining a weekly part index
2 based at least in part on the daily part index.

1 14. The method of claim 13, wherein only daily part index values greater than a first value
2 are used to calculate the weekly part index.

1 15. The method of claim 13, wherein the weekly part index is calculated in accordance with
2 the equation:

3
$$PI_{wp} = \sum_{t=1}^m \frac{PI_{D(p,t)}}{m},$$

4 wherein

5 PI_{wp} is the weekly part index for product p ;

6 p is the product for which the weekly part index is being calculated;

7 t is the date for which the weekly part index is being calculated;

8 $PI_{D(p,t)}$ is the daily part index of date t for product p ; and

9 m is the number of days in one week for which $PI_{D(p,t)}$ is valid.

1 16. The method of claim 13, further including the step of determining a site index based at
2 least in part on the weekly part index.

17. The method of claim 16, wherein the site index is calculated in accordance with the equation:

$$SI_{wf} \% = \frac{\sum_{t=1}^m AQ_{(p,t)} \times PI_{wp} \%}{\sum_{t=1}^m AQ_{(p,t)}},$$

wherein

$SI_{wf} \%$ is the site index for week W and fabrication site f ;

$AQ_{(p,t)}$ is the wafer out quantity sum of product p that is actually finished on dates t on which $PQ_{(p,t)}$ is valid; and

PI_{wp} is the weekly part index for product p .

18. The method of claim 10, wherein the first date is the same date as the second date.

19. A computer program product for providing a method of monitoring fabrication performance, the computer program product having a medium with a computer program embodied thereon, the computer program comprising

computer program code for calculating a planned quantity as an expected value that is to be fabricated on a first date in accordance with a production plan;

computer program code for calculating an actual quantity as an actual value that is fabricated on a second date; and

computer program code for calculating a daily part index, wherein the daily part index represents a delta between the planned quantity and the actual quantity divided by the planned quantity.

20. The computer program product of claim 19, wherein the computer program code for calculating the planned quantity determines the planned quantity for a date previous to a date corresponding to the actual quantity.

21. The computer program product of claim 19, wherein the computer program code for calculating the daily part index determines the daily part index in accordance with the equation:

$$PI_{D(p,t)} = \left[1 - \frac{\max \left[\left(\sum_{k=-1}^1 PQ_{(p,t+k-7)} - \sum_{k=-1}^1 AQ_{(p,t+k)} \right), 0 \right]}{\sum_{k=-1}^1 PQ_{(p,t+k-7)}} \right] \times 100\%,$$

wherein

$PI_{D(p,t)}$ is the daily part index of date t for product p ;

t is the date for which the daily part index is being calculated;

p is the product for which the daily part index is being calculated;

$PQ_{(p,t+k-7)}$ is the wafer out quantity sum of product p which is planned to be finished on one week previous of date t according to the production plan; and

$AQ_{(p,t+k)}$ is the wafer out quantity sum of product p which is actually finished in date t .

22. The computer program product of claim 19, further including computer program code for determining a weekly part index based at least in part on the daily part index.

23. The computer program product of claim 22, wherein only daily part index values greater than a first value are used to calculate the weekly part index.

24. The computer program product of claim 22, wherein the computer program code for calculating the weekly part index determines the weekly part index in accordance with the equation:

$$PI_{wp} = \sum_{t=1}^m \frac{PI_{D(p,t)}}{m},$$

wherein

PI_{wp} is the weekly part index for product p ;

p is the product for which the weekly part index is being calculated;

t is the date for which the weekly part index is being calculated;

$PI_{D(p,t)}$ is the daily part index of date t for product p ; and

m is the number of days in one week for which $PI_{D(p,t)}$ is valid.

25. The computer program product of claim 22, further including computer program code for determining a site index based at least in part on the weekly part index.

26. The computer program product of claim 25, wherein the computer program code for determining the site index determines the site index in accordance with the equation:

$$SI_{wf} \% = \frac{\sum_{t=1}^m PQ_{(p,t)} \times PI_{wp} \%}{\sum_{t=1}^m PQ_{(p,t)}},$$

wherein

$SI_{wf} \%$ is the site index for week W and fabrication site f ;

$PQ_{(p,t)}$ is the wafer out quantity sum of product p that is planned to be finished on dates t on which $PQ_{(p,t)}$ is valid; and

PI_{wp} is the weekly part index for product p .

27. The computer program product of claim 19, wherein the first date is the same date as the second date.

28. A computer program product for providing a method of monitoring fabrication performance, the computer program product having a medium with a computer program embodied thereon, the computer program comprising

computer program code for calculating a planned quantity as an expected value that is to be fabricated on a first date in accordance with a production plan;

computer program code for calculating an actual quantity as an actual value that is fabricated on a second date; and

computer program code for calculating a daily part index, wherein the daily part index represents a delta between the planned quantity and the actual quantity divided by the actual quantity.

29. The computer program product of claim 28, wherein the computer program code for calculating the planned quantity determines the planned quantity for a date previous to a date corresponding to the actual quantity.

30. The computer program product of claim 28, wherein the computer program code for calculating the daily part index determines the daily part index in accordance with the equation:

$$PI_{D(p,t)} = \left[1 - \frac{\max \left[\left(\sum_{k=-1}^1 PQ_{(p,t+k-7)} - \sum_{k=-1}^1 AQ_{(p,t+k)} \right), 0 \right]}{\sum_{k=-1}^1 AQ_{(p,t+k-7)}} \right] \times 100\%,$$

wherein

$PI_{D(p,t)}$ is the daily part index of date t for product p ;

t is the date for which the daily part index is being calculated;

p is the product for which the daily part index is being calculated;

$PQ_{(p,t+k-7)}$ is the wafer out quantity sum of product p which is planned to be finished on one week previous of date t according to the production plan; and

$AQ_{(p,t+k)}$ is the wafer out quantity sum of product p which is actually finished in date t .

31. The computer program product of claim 28, further including computer program code for determining a weekly part index based at least in part on the daily part index.

32. The computer program product of claim 31, wherein only daily part index values greater than a first value are used to calculate the weekly part index.

33. The computer program product of claim 31, wherein the computer program code for calculating the weekly part index determines the weekly part index in accordance with the equation:

$$PI_{wp} = \sum_{t=1}^m \frac{PI_{D(p,t)}}{m},$$

wherein

PI_{wp} is the weekly part index for product p ;

p is the product for which the weekly part index is being calculated;

t is the date for which the weekly part index is being calculated;

$PI_{D(p,t)}$ is the daily part index of date t for product p ; and

m is the number of days in one week for which $PI_{D(p,t)}$ is valid.

34. The computer program product of claim 31, further including computer program code for determining a site index based at least in part on the weekly part index.

35. The computer program product of claim 34, wherein the computer program code for determining the site index determines the site index in accordance with the equation:

$$SI_{wf} \% = \frac{\sum_{t=1}^m AQ_{(p,t)} \times PI_{wp} \%}{\sum_{t=1}^m AQ_{(p,t)}},$$

wherein

$SI_{wf} \%$ is the site index for week W and fabrication site f ;

$AQ_{(p,t)}$ is the wafer out quantity sum of product p that is actually finished on dates t on which $PQ_{(p,t)}$ is valid; and

PI_{wp} is the weekly part index for product p .

36. The computer program product of claim 28, wherein the first date is the same date as the second date.